COUNTY OF LOS ANGELES
Public Health

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April 5, 2007

TO: Each Supervisor

FROM: Jonathan E. Fielding, M.D., M.P.H.
Director and Health Officer

SUBJECT: **HEPATITIS A VACCINATIONS**

On March 6, 2007, the Board approved a motion by Supervisor Antonovich, which directed me to review the relevant public health literature and report back with an analysis, including cost-benefit calculations, concerning the question of whether hepatitis A vaccinations should be required for food service workers in restaurants, catering companies, and in wholesale markets.

We have completed a review of our data regarding food service worker-associated outbreaks in recent years. We have reviewed two published cost-benefit analyses of this issue and are in the process of refining an economic analysis based on the specific data for Los Angeles County. We have also asked County Counsel to review our legal authority in this policy area. We will submit a complete report by May 4, 2007.

In the meantime, if you have any questions or need additional information, please let me know.

JEF:eb
PH:703:005

c: Chief Administrative Officer
County Counsel
Executive Officer, Board of Supervisors

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May 3, 2007

TO: Each Supervisor

FROM: Jonathan E. Fielding, M.D., M.P.H. Jonathan E Fielding
Director and Health Officer

SUBJECT: **HEPATITIS A AND FOOD WORKERS**

On March 6, 2007, the Board approved a motion by Supervisor Antonovich, which directed me to review the relevant public health literature and report back with an analysis, including cost-benefit calculations, concerning the question of whether Hepatitis A vaccinations should be required for food service workers in restaurants, catering companies, and in wholesale markets. On April 5, 2007, I provided you with a brief status report. This is the response to the motion.

Summary and Recommendation

Hepatitis A is a serious communicable disease. Even though the rate of cases is declining and the percentage of those cases attributed to food service workers (FSWs) is low, any Hepatitis A in FSWs is cause for concern because of the potential for transmission to patrons and co-workers. For that reason, staff from Acute Communicable Disease Control and Environmental Health conduct a thorough investigation whenever a case in a FSW is reported.

County Counsel has informed us that it appears that the County is pre-empted from imposing a universal vaccination requirement for FSWs. In both current state law and the newly enacted California Retail Food Code ("CRFC"), which becomes operative July 1, 2007, the Legislature has affirmatively occupied the whole field of health and sanitation standards for retail food facilities, and has provided uniform statewide health and sanitation standards for those facilities. Both the current and the new CRFC allow the local governing body to adopt and maintain a retail food facility grading system, to prohibit certain types of food facilities, and employ an employee health certification program. It appears that this certification is related to certifying the employee concerning principles of health, rather than requiring vaccination.

In regard to food-borne illness, including Hepatitis A, the CRFC specifically provides for the protection of the public's health through mandatory reporting to the local health officer of FSWs with symptoms of gastrointestinal illness. Because the Legislature has opted to protect the public's health from food-borne illness through a mandatory reporting mechanism, a county ordinance requiring a mandatory Hepatitis A vaccine for all FSWs would likely intrude on an area of retail food facility regulation already expressly and fully occupied by general law.

It is estimated that 70 percent or more of the food service workers (FSWs) in the County are immune (either through exposure or vaccination). Thus, the majority of this workforce is already protected. With high rates of vaccinations of children for Hepatitis A, over time, the rates of those immune should rise and the rates of disease should continue to fall, along with the number of cases reported among FSWs.

In light of the likely pre-emption and the new mandatory reporting requirements enacted in the CRFC, we propose to take two actions:

1) The CRFC contains a provision for greater responsibility for food facilities to report FSW illnesses. We propose to emphasize this responsibility in communications, trainings and technical assistance consultations for food facility managers and staff, in order to encourage earlier recognition of disease among food service workers.

2) Even though the Centers for Disease Control and Prevention (CDC) recommendations for Hepatitis vaccination are limited to children and certain higher-risk groups of adults, we will recommend that all adults receive the vaccine, if not already immune, as a preventive measure. We will promote our recommendations through our website and through our communications with health care providers.

Legal Issues

The Legislature through the enactment of the new California Retail Food Code, which becomes operative July 1, 2007, expressly occupies the whole field of health and sanitation standards for retail food facilities to assure the people of California that the food will be pure, safe, and unadulterated.

The CRFC continues to allow the local governing body to employ and maintain a retail food facility grading system, to prohibit certain types of food facilities, and adopt an employee health certification program. The employee health certification program relates to certifying the education of employees and FSWs concerning principles of health, rather than incorporating a mandatory vaccination requirement.

Through the CRFC, the Legislature has enacted a mandatory reporting duty on public health permit-holders and supervisory FSWs. This duty requires an individual in charge of the operations of a retail food facility to report specific food employee illness and/or employees experiencing symptoms of acute gastrointestinal illness to Environmental Health. ["Illness" is defined as a condition caused by any of the following infectious agents: Salmonella typhi, Salmonella spp., Shigella spp., Entamoeba histolytica, Enterohemorrhagic or shiga toxin producing Escherichia coli, Hepatitis A virus, and Norovirus.] With reasonable cause, Environmental Health may: 1) restrict or exclude an employee from the food facility, 2) immediately close the food facility, or 3) require a medical evaluation of the food employee. The Legislature has sought to accomplish the goal of reducing the likelihood of food-borne disease transmission by a means of a mandatory self-reporting system instead of a mandatory vaccination or prophylactic system.

Hepatitis A

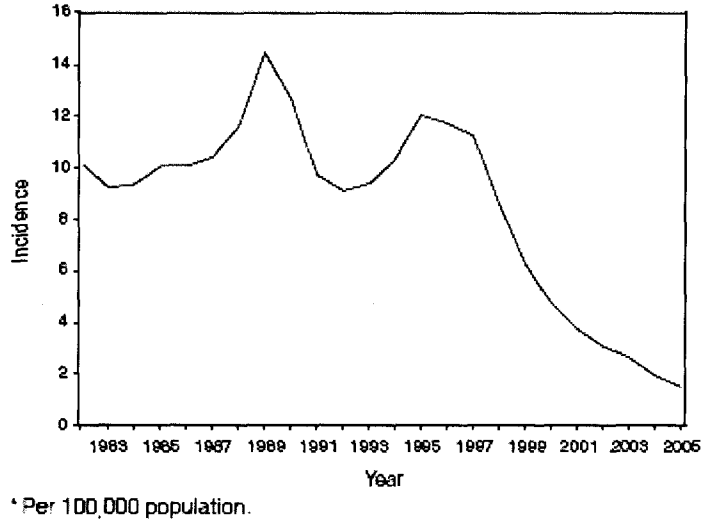
Hepatitis A is caused by the hepatitis A virus (HAV). It is spread via the fecal-oral route by direct contact or ingesting food or water contaminated with HAV. While hepatitis A does not result in chronic disease, approximately 25% of adults who are reported to have hepatitis A are hospitalized. Almost 2% of those infected over age 50 years die of the acute disease.

Until the licensure of a vaccine in 1995, rates of hepatitis A often exceeded 15/100,000. Community-wide outbreaks lasting years were common. In 1999, the ACIP recommended vaccinating all children aged >2 in western states, which at that time had rates over 20/100,000. The vaccine was available to LAC children through the Vaccine for Children Program (VFC) at that time. Since then, the rate of hepatitis A has fallen dramatically locally and nationally. The dramatic fall in rates in the western states led the CDC

to recommend in 2006, that children in all states who are ≥ 1 receive the vaccine. In March of 2007, the CDC released a report showing that the national rate in 2005 was the lowest reported in 40 years at 1.8/100,000 persons (Figure 1). The Los Angeles County rate in 2005 was 5/100,000, due to a county-wide outbreak, but is estimated at 2/100,000 now.

Prevention includes appropriate food preparation (from farm to table) and sewage control. Prevention is also achieved through vaccination, which, in addition to children, is recommended for men who have sex with men, illicit drug users, travelers to developing countries, persons with clotting factor disorders, and persons with chronic liver disease.

FIGURE 1. Incidence* of acute hepatitis A, by year — United States, 1982–2005



* Per 100,000 population.

Foodborne Hepatitis A

The CDC estimates that 10.9% of acute hepatitis A is acquired from food and water sources. It is unknown what proportion of this percentage is due to primary contamination of food (such as contaminated lettuce due to sewage water used during the growing process) or secondary contamination of food, due to FSW illness. The largest recorded outbreaks of acute hepatitis A have been due to contaminated produce, such as green onions or strawberries.

The CDC estimates that 8% of cases of acute hepatitis A occur in FSW, although the majority of FSW with hepatitis A do not transmit the disease. From 2003-2006, in Los Angeles County, only 1-4% of all hepatitis A cases occurred in FSW (including cashiers, wait staff, bartenders, and cooks). Since 2003, there have been eight instances of FSWs identified with acute hepatitis A that led to public notification and/or provision of Immune Globulin to restaurant patrons and/or staff. Public Health performed enhanced surveillance during the six weeks after these events. Despite enhanced surveillance, Public Health was unable to identify a verified report of acute hepatitis A occurring in a patron of any of the establishments.

Since 2005, there have been four situations where a food or drink establishment has been identified as a source of hepatitis A among patrons. None of these situations was definitively attributable to FSW infection. In two situations, interviews with FSWs and review of employee illness and sick-time records did not reveal any symptomatic food workers. In one situation, all FSWs were proven by blood tests to have pre-existing immunity to hepatitis A. In these three situations, it is believed that tainted produce may have been the cause of these outbreaks. In a recent situation, a symptomatic patron who contaminated an ice chest was believed to be the source of the outbreak.

Federal and State Recommendations

The CDC currently does not recommend routine vaccination of FSWs and the California Department of Health Services has no formal position, but agrees that routine vaccination of FSWs is not necessary.

High Levels of Immunity

Several sources of information lead us to believe that the FSW population in the County may already have a relatively high rate of immunity to hepatitis A and thus not be a source of this disease.

Generally, immigrants to Los Angeles from other countries where hepatitis A is more prevalent are more likely to have immunity. While only 25% of native-born US residents have evidence of immunity to hepatitis A, 69% of foreign-born residents have such immunity. Given the reported high rates of employment of immigrants in food service positions, it is likely that a significant portion of FSWs are immune. Because more than 50% of FSWS are young (less than 30 years), an increasing percentage each year will have received the vaccine as part of routine, childhood immunizations. A high prevalence of both young food-handlers who have already been vaccinated and FSWs born outside of the United States may account for the relatively high level of immunity apparent in County FSWs.

In three recent situations, Public Health administered blood tests to FSWs during hepatitis A investigations; in the first situation, 23 of 27 (79%) were immune; in the second 100% (6 of 6) of the FSWs were immune to hepatitis A (all had been born outside the country) and in the last situation 55% (28/51) had either serologic evidence of immunity or history of vaccination.

Other Jurisdictions

We are aware of only two jurisdictions in the United States that require hepatitis A vaccination for FSWs: St. Louis, MO and Clark County, NV (covering Las Vegas). These programs started in the past eight years. FSWs are required to obtain hepatitis A vaccination at their own or the restaurants' cost. The local health departments review the immunization status of the FSWs during routine restaurant inspections. In the case of Clark County, the immunization requirement was added onto a pre-existing requirement for health department certification for foodworkers so the start-up costs were reduced. St. Louis provides the vaccine at cost at three county clinics and reports that there have not been documented cases of Hepatitis A in food workers since implementation. However, this time period coincided with decreasing rates of Hepatitis A cases nationwide.

Cost-Benefit Analyses

Our literature review identified two cost-benefit studies regarding food workers and vaccination for acute hepatitis A. Both studies were completed in 2000 and published in 2000 and 2001. These studies are not directly comparable due to different study methods and assumptions used.

One of the studies, a pharmaceutical industry sponsored cost-effectiveness study, found that vaccinating food workers at age 20 would be cost-effective. The other study, a cost-benefit study by the staff associated with the CDC, concluded that even after applying the most conservative assumptions and scenarios, food worker vaccination for hepatitis A was not justified from an economic standpoint, even if vaccination was done only during epidemics. The CDC study included an evaluation of potential economic losses to restaurants due to public notification; even when examining the extreme scenario - a 75% probability of bankruptcy - vaccination was still found not to be cost-beneficial.

Both studies used disease incidence data that is considerably higher than is currently the case. If recalculated based on today's incidence rates, the studies would be less likely to demonstrate cost-effectiveness. Variables that significantly affect results of such studies include the incidence of acute hepatitis A, the proportion of cases in the general population occurring in and due to food workers, mortality rates, and the cost of vaccine and administering such a program.

Using the two studies as reference points, we made estimates of the costs of implementation of mandatory vaccination (or proof of immunity) in the County. Even with the assumption of one vaccine shot (which provides 95% immunity), rather than two, and the option of administering blood tests to determine immunity, the results of our analysis show that it is not economical to require vaccination of the approximately 300,000 to 400,000 FSWs in the County. This is primarily due to the estimated low rate of food-borne hepatitis A in the County, the percentage of already immune food-workers, and the costs inherent in developing and implementing a program to immunize (or otherwise demonstrate immunity). Setting up a registry or record-keeping system for an estimated 300,000 to 400,000 FSWs, with high FSW turnover would be complicated and expensive.

We will implement the recommendations above and continue to monitor hepatitis A in the County, and specifically when associated with food facilities. If you have any questions or need additional information, please let me know.

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c: Chief Administrative Officer
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